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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,681	07/18/2003	Juan Carlos Zuniga	I-2-0358.1US	3634
24374	7590	11/27/2006	EXAMINER	
VOLPE AND KOENIG, P.C. DEPT. ICC UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			TRAN, KHANH C	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 11/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/622,681

Applicant(s)

ZUNIGA ET AL.

Examiner

Khanh Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9 and 11-23 is/are rejected.
- 7) ☒ Claim(s) 4, 10 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. **Claim 16** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Request Applicants to clarify the claimed limitations "each code in a row lower in the the tree has a value at least twice that of the assigned numeric value of the numeric value assigned to that code", e.g. an example to show the claimed limitations are enabling.

2. **Claims 17-20** are rejected because of dependency on claim 16.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 5, 11, 21-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Heo U.S. Patent 7,020,176 B2.

Regarding claim 1, in column 3 lines 25-45, Heo discusses the OVSF codes are structurally constructed in the form of a tree. If an upper code is used in the tree, it has no orthogonal property with every lower code, so that the lower codes cannot be used. If even one lower code is used, its upper codes cannot be used.

In column 4 lines 3-50, Heo method includes:

the step of using a spreading factor and the tree structure to determine the optimal channelization code comprising

determining whether a channelization code of the plurality of channelization codes which corresponds to the checked flag is available; and identifying the channelization code as the optimal channelization code and proceeding to the step of generating and assigning the channelization code number for the optimal channelization code, if it is determined that the channelization code which corresponds to the checked flag is available. The method further includes the step of generating a message indicating that there is no available channelization code of the plurality of channelization codes, if it is determined that the channelization code which corresponds to the checked flag is unavailable.

FIG. 8 is a flow chart illustrating the method of assigning OVSF codes. The method is repeated for every spreading factor.

Regarding claim 5, in column 4 lines 25-46, Heo further teaches the step of using the spreading factor and the tree structure to determine the optimal channelization code includes the steps of checking a flag corresponding to an optimum channelization code number of the plurality of channelization code numbers; determining whether a channelization code of the plurality of channelization codes which corresponds to the checked flag is available. Heo method further includes the step of generating a message indicating that there is no available channelization code of the plurality of channelization codes, if it is determined that the channelization code which corresponds to the checked flag is unavailable. In light of the foregoing, the number of reassigned codes is limited depending on the situation.

Regarding claim 11, claim is rejected on the same ground as for claim 5 because of similar scope.

Regarding claim 21, FIG. 6 illustrates a portion of a tree structure including rows, wherein each successive row down the tree having double a spreading factor of a preceding row. All the codes are sequentially numbered in the OVSF tree, where codes have a same spreading factor are in sequence, e.g. SF=64(0,1,2,3).

Regarding claim 22, because the lowest spreading factor is one, hence, the code is assigned as 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-3, 6, 8-9, 12-15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heo U.S. Patent 7,020,176 B2.

Regarding claim 2, Heo does not teach the codes are within a same time slot as the selected codes.

Heo method is to determine an optimal channelization or OVSF code for assignment to a channel in a UMTS includes the steps of extending the plurality of channelization codes in the form of a tree structure having a plurality of sub-trees; see column 4 lines 3-20. Because the new optimum OVSF codes are assigned to a new channel, it would have been obvious for one of ordinary skill in the art at the time of the invention was made to modify Heo teachings to use codes in the same time slot for the new channel. At the time of the invention, Applicants have not disclosed that using codes within same time slot would provide any advantage, or is used for any particular purpose, or solves a stated problem. And it appears that the modification of Heo teachings would perform equally well with the selected codes in the same time slot as long as the codes are optimal channelization codes.

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Regarding claim 3, using similar arguments as in claim 2 rejection, because the new optimum OVSF codes are assigned to a new channel, it would have been obvious for one of ordinary skill in the art at the time of the invention was made to modify Heo teachings to use codes in different time slot for the new channel. At the time of the invention, Applicants have not disclosed that using codes within different time slot would provide any advantage, or is used for any particular purpose, or solves a stated problem. And it appears that the modification of Heo teachings would perform equally well with the selected codes in the same time slot as long as the codes are optimal channelization codes.

Regarding claim 6, Heo does not teach the first spreading factor is a highest spreading factor.

However, depending on the available codes of the spreading factor, one of ordinary skill in the art would have recognized that it its possible for Heo teachings to receive the highest spreading factor initially; see also FIG. 8. Furthermore, at the time of the invention, Applicants have not disclosed that using the highest spreading factor would provide any advantage, or is used for any particular purpose, or solves a stated problem.

Regarding claim 8, claim is rejected on the same ground as for claim 2 because of similar scope.

Regarding claim 9, claim is rejected on the same ground as for claim 3 because of similar scope.

Regarding claim 12, Heo does not explicitly teach the representation of the code tree is stored as a vector as claimed in the application claim.

However, Heo discloses in Table 1 (see columns 8-9) values of OVSF codes in a tree. Furthermore, FIG. 6 discloses a flag(x,y) wherein 'x,y' in parenthesis indicates the code number; see column 5 lines 35-45. Because 'x,y' in parenthesis indicates the code number, one of ordinary skill in the art at the time the invention was made would have recognized that the 'x,y' would have similar meaning as a vector.

Regarding claim 13, in column 6 lines 15-25, Heo further teaches that every OVSF code number corresponding to each SF has a unique flag (x,y), which corresponds to the claimed element.

Regarding claim 14, as disclosed in column 6 lines 25-35, all the flags(x,y) are contiguous for codes having the same spreading factor, e.g. flag(4,0), flag(4,1), flag(4,2).....

Regarding claim 15, Heo does not expressly teach each element having to bits as set forth in the application claim.

However, as recited in claim 13 rejection, every OVSF code number corresponding to each SF has a unique flag (x,y). As disclosed in column 6 lines 15-45, the flag determines if the code is available. In further example, Heo teaches that as illustrated in FIG. 7, if SF=16, code #1 is in use while SF=16, code #0 is released, the flag(8,0) and flag(4,0) are not released. In view of that, "x,y" determine whether one or multiple codes are released or not released. Because of the aforementioned teachings, one of ordinary skill in the art at the time the invention was made would have recognized that the flag settings and "x,y" would correspond to the two bits as claimed in the application claim.

Regarding claim 23, claim is rejected on the same ground as for claim 15 because of similar scope.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heo U.S. Patent 7,020,176 B2 in view of Choi et al. U.S. Patent 6,934,526 B2.

Regarding claim 7, claim is rejected on the same ground as for claim 6 because of similar scope.

Heo, however, does not teach a Radio network controller (RNC) having a radio resource management device as set forth in the application claim.

Choi et al. discusses in FIG. 1 illustrates architecture of a conventional W-CDMA communication system. As illustrated, a radio network controller (RNC) controls a process for connecting the UE. Further, the RNC manages assignment of channel

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resources to the UEs connected to one or more Node Bs. The Node Bs and the RNC constitute a UTRAN (UMTS Terrestrial Radio Access Network); see column 1 lines 49-50.

Heo invention applies to a Universal Mobile Telecommunication System (UMTS), and more particularly, to a method and system for assigning an optimal Orthogonal Variable Spreading Factor (OVSF) code, also known as a channelization code, for separation of downlink channels to a new channel, while maintaining the existing OVSF codes. Because UMTS includes a RNC managing assignment of channel resources to the UEs connected to one or more Node Bs as discussed in Choi et al., one of ordinary skill in the art would have recognized that Heo teachings also include a RNC having a radio resource management device capable of performing the steps as recited in claim 1.

Allowable Subject Matter

6. Claims 4, 10 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Felix et al. U.S. Patent 6,233,231 B1 discloses "Data Transmission Within A Spread-Spectrum Communication System".

Choi et al. U.S. Patent 6,885,653 B2 discloses "Apparatus And Method For Allocating Channel Using OVSF Code For Uplink Synchronous Transmission Scheme In A W-CDMA Communication System".

Hudson U.S. Patent 6,680,902 B1 discloses "Spreading Code Selection Process For Equalization In CDMA Communications Systems".

Yang U.S. Patent 6,907,060 B2 discloses "Method For Generating OVSF Codes In CDMA Multi-Rate System".

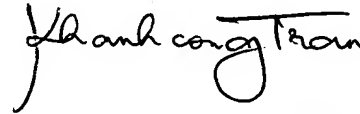
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCT

 11/22/06

Khanh Tran
Primary Examiner